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EXAMINER

ROSENDALE, MATTHEW L

ART UNIT	PAPER NUMBER
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2612

10

DATE MAILED: 03/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/395,935

Applicant(s)

KOSEKI ET AL.

Examiner

Matthew L Rosendale

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/17/04.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9 and 18 is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-17, 19-24 and 26-28 is/are rejected.
- 7) ☒ Claim(s) 25 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 September 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Response to Arguments

Applicant's arguments filed 12/17/04, with respect to claims 1 – 8 and 10 - 17 have been fully considered but they are not persuasive.

Regarding claim 1, the applicant argues that Anderson '958 does not show “the normal taking mode” as disclosed by the first embodiment of the present application where the normal taking mode is characterized by obtaining image pickup signals on the basis of normal AE information. The examiner maintains that Anderson '958 does disclose a normal image taking mode of generating image data from one frame using “normal AE information” (Col. 9, Line 66 – Col. 11, Line 32). Claim 1 does not specifically define what “normal AE information” is, therefore the limitation of “the normal taking mode” can be met with any reference disclosing a means of capturing a signal image according to AE information. The rejection of claim 1 will be maintained.

Regarding claims 2 and 3, the applicant argues that the secondary reference Ohta discloses warning messages but they are not concerned with suitability determining information in determining whether a suitable wide dynamic range, synthesized image can be obtained. Ohta discloses a camera having a pre-photography warning system that displays indicators to the user or used audio warnings denoting that the current photography or camera conditions are not suitable for image capture. The warnings disclosed by Ohta range from improper white balance to low memory capacity and are all obtained before the taking of the image (Paragraph 0136).

Claims 2 and 3 disclose a “means for displaying as a suitability determining information of the synthesized image generating process at least one information out of information based on previously taken image data, information obtained before the taking of image, and information set on the image pickup apparatus before taking of image that is required in determining whether a suitable wide dynamic range, synthesized image can be obtained”. The reference of Anderson ‘985 has already been provided to show that synthesized wide dynamic images are well known in the art. Ohta is merely provided to show that determining suitable photography and camera conditions based on information obtained before the taking of an image such as white balance and displaying the result is also well known. Therefore it would be advantageous to the user to have the warning message system of Ohta with the wide dynamic image capture of Anderson ‘985 so that the user can be alerted to any adverse condition that would not warrant an ideal image capture situation for synthesized wide dynamic imaging.

Regarding claim 10, the applicant argues that the secondary reference of Tsai fails to detect motion of an object. Tsai discloses an image pickup apparatus capable of taking images of the same object at a plurality of different exposure amounts to generate image signals corresponding to a plurality of frames of different exposure amounts to generate a composite image having a wide dynamic range by synthesizing images signals of the plurality of frames having different exposure amounts. Tsai also discloses a means of detecting motion in an image and correcting the motion if found to be in an allowable range for correction (Col. 2, Line 63 – Col. 4, Line 65). The applicant asserts on pages 20 and 21 of the amendment, citing Tsai that the calculation of $N+1$ and comparing it with a pre-selected value does not constitute motion detection. However, taking an excerpt of what the applicant has cited Tsai discloses “If, for

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example, the first pixel is found to be underexposed ($N < 25$), the electronic data processing unit 300 retrieves the data for the first pixel of the $N+1$ exposure range image and compares the data with a pre-selected value to determine whether the $N+1$ data is invalid due to subject motion.”

What Tsai is doing is an implicit motion detection method because the pixel data is found to be invalid because of subject motion, therefore according to Tsai, if the first pixel of $N+1$ exposure range image is found invalid, then motion has been detected at that pixel location.

Regarding claim 11, the applicant argues that Anderson ‘958 fails to disclose a normal taking control means based on a normal taking mode for generating image pickup signals corresponding to one frame from the image pickup means. In addition, the applicant states that Anderson ‘958 fails to disclose the additional features of claim 11 concerning a display means for displaying ON/OFF status of the generation processing of wide dynamic range, synthesized images on the basis of the taking mode set at the mode setting means. As stated in the response to the arguments regarding claim 1, Anderson ‘958 does disclose a “normal taking mode”. As for the additional features of claim 11, figure 6C of Anderson ‘958 shows an LCD viewing area 302 of the camera used to display the ON/OFF operation status of the Salient image capture mode. Anderson discloses that operation warning indicators can be in the form of text warnings in the text area 640, an indicator light 650, or an audio warning not shown on the display 302 (Col. 6, Line 51 – Col. 7, Line 4). The applicant admits on page 22 of the amendment that the warning device of Anderson ‘958 can be used to “notify the user that the SSC mode is in operation”. Such a use constitutes displaying ON/OFF operation status.

Regarding claims 7 and 13, the applicant argues that the secondary reference of Ohta fails to disclose a suitability determination means and that the warning messages taught by Ohta are

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not concerned with suitability determining information in determining whether a suitable wide dynamic range, synthesized image can be obtained. As stated in the response to the arguments regarding claims 2 and 3, Ohta does disclose a "suitability determination means".

Regarding claim 8, the applicant argues that Tsai does not need to store exposure ratios since each of the five storage sections 210 – 250 correspond to a respective exposure level. However, since each of the five storage sections correspond to the exposure level of each stored image, the exposure ratio for a particular can be derived from its corresponding storage section as identifier information using the framestore of Tsai.

Regarding claim 14, the applicant argues that Tsai and Anderson '523 are totally silent with regard to displaying brightness information of a desired portion of an object together with an image of the object. The examiner has relied upon the combination of Tsai and Anderson '523. Therefore it would have been obvious to one of ordinary skill in the art to use the review mode of Anderson '523 as the following: Anderson teaches a review mode for displaying thumbnail images of the captured images in the frame memory along with identifier information. Tsai discloses a frame memory with multiple storage sections where each section is specifically designated to store an image with a specific exposure amount. Therefore using the review mode and identifier information of Anderson with the image capture method of Tsai it can be possible to review the plurality of images having different exposure levels using the exposure ratio brightness information of Tsai as each image's identifier so that the user can determine whether or not the proper exposure range of an object scene has been captured to generate a composite image having a wide dynamic range and proper exposure.

Regarding claim 15, the applicant argues that neither Anderson '523 nor Anderson '958 discloses "means for designating a plurality of desired regions of a displayed image", nor a disclosure concerning "means for obtaining luminance information of the regions designated by the designation means". However, figure 8B of Anderson '958 shows the captured image data is divided into a plurality of desired regions. Luminance information is extracted from each of the plurality of areas to detect high contrast (Col. 7, Lines 49 – 67). This feature of Anderson '958 constitutes "means for obtaining luminance information of the regions designated by a designation means". Anderson '523 discloses a means of displaying images stored in a file folder for user review. As shown in figure 8, a user enters a review mode and can view multiple images 700 on the LCD display area to determine if the captured images are acceptable (Col. 10, Line 39 – Col. 11, Line 23). The examiner found motivation to combine these references to teach the above claimed features cited by the applicant in that Anderson '523 teaches a means of displaying an image and Anderson '958 teaches a means of dividing an image into a plurality of desired regions and extract luminance in the regions to detect high contrast. Therefore it would be advantageous to display the image so that the user can verify the plurality of regions used to extract luminance in order to properly process the image data.

Applicant's arguments, see paper No. 8, filed 12/17/04, with respect to claim 9 have been fully considered and are persuasive.

Regarding claim 9, the applicant argues that Anderson '958 does not disclose a means of "correcting exposure amounts of image signals corresponding to a plurality of frames of different exposure amounts and that there is no means disclosed as to a display means for displaying

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operation status of the means for correcting exposure amount. Upon further consideration, the examiner agrees with the applicant in that Anderson '958 does not disclose correcting the exposure amounts of each individual Salient image. Instead Anderson uses the plurality of images to produce a wide dynamic image with proper exposure for highlights and shadows and the exposure adjustment of Anderson '958 is characterized by synthesizing the plurality of frames having different exposure amounts. The rejection of claim 9 will be withdrawn.

Response to Amendment

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1, 11, 22, and 27 are rejected under 35 U.S.C. 102(e) as being anticipated by Anderson US Pat No 6,177,958.

Referring to claim 1, Anderson '958 discloses an image pickup apparatus in figure 3 capable of taking images of the same object at a plurality of different exposure amounts defined by Anderson '958 as Salient images. The Salient images are combined to generate a single image having a wide dynamic range.

Anderson '958 also discloses an image capture method shown in figures 11A and 11B comprising a mode control means 1402 and 1406 for selecting between a normal image taking

mode of generating image data from one frame, and a means of producing a wide dynamic image having proper exposure 1407 by automatically detecting the need for capturing Salient images when the control means 1404 detects a high contrast scene (Col. 9, Line 66 – Col. 11, Line 32).

2. Referring to claim 11, Anderson '958 discloses an image pickup apparatus in figure 3 capable of taking images of the same object at a plurality of different exposure amounts defined by Anderson as Salient images. The Salient images are combined to generate a single image having a wide dynamic range and corrected exposure amounts.

Anderson '958 also discloses an image capture method shown in figures 11A and 11B comprising a mode control means 1402 and 1406 for selecting between a normal image taking mode of generating image data from one frame, and a means of producing a wide dynamic image having proper exposure 1407 by automatically detecting the need for capturing Salient images when the control means 1404 detects a high contrast scene (Col. 9, Line 66 – Col. 11, Line 32).

Figure 6C of Anderson '958 shows an LCD viewing area 302 of the camera used to display the ON/OFF operation status of the Salient image capture mode. Anderson discloses that operation warning indicators can be in the form of text warnings in the text area 640, an indicator light 650, or an audio warning not shown on the display 302 (Col. 6, Line 51 – Col. 7, Line 4).

3. Referring to claim 22, Anderson '958 discloses an image pickup apparatus in figure 3 capable of taking images of the same object at a plurality of different exposure amounts defined by Anderson as Salient images. The Salient images are combined to generate a single image having a wide dynamic range and corrected exposure amounts.

Anderson '958 also discloses an image capture method shown in figures 11A and 11B comprising a mode control means 1402 and 1406 for selecting between a normal image taking mode of generating image data from one frame, and a means of producing a wide dynamic image having proper exposure 1407 by automatically detecting the need for capturing Salient images when the control means 1404 detects a high contrast scene (Col. 9, Line 66 – Col. 11, Line 32).

Figure 6C of Anderson '958 shows an LCD viewing area 302 of the camera used to automatically display the ON/OFF operation status of the Salient image capture mode. Anderson discloses that operation warning indicators can be in the form of text warnings in the text area 640, an indicator light 650, or an audio warning not shown on the display 302 (Col. 6, Line 51 – Col. 7, Line 4).

4. Referring to claim 27, Anderson '958 discloses that the information set for image taking is a taking mode setting information comprising for example, shutter speed (Col. 8, Lines 46 – 67).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 2 –7 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson US Pat No 6,177,958 in view of Ohta.

Referring to claim 2, Anderson '958 discloses a means of capturing a plurality of images having different exposure values to produce a synthesized wide dynamic image, but there is no means disclosed by Anderson for determining whether or not the Salient images can be properly captured or that the synthesized image can be produced.

Ohta discloses a camera having a pre-photography warning system that displays indicators to the user or used audio warnings denoting that the current photography or camera conditions are not suitable for image capture. The warnings disclosed by Ohta range from improper white balance to low memory capacity and are all obtained before the taking of the image (Paragraph 0136).

Therefore it would have been obvious to use the warning system of Ohta with the image capture system of Anderson '958 so as to ensure there is enough memory to capture the plurality of Salient images and that the photography conditions are setup correctly so that the image is captured with proper lighting and white balance.

6. Referring to claim 3, Anderson '958 discloses a means of capturing a plurality of images having different exposure values to produce a synthesized wide dynamic image, but there is no means disclosed by Anderson for determining whether or not the Salient images can be captured or that the synthesized image can be produced.

Ohta discloses a camera having a pre-photography warning system that displays indicators to the user or used audio warnings denoting that the current photography or camera conditions are not suitable for image capture. The warnings disclosed by Ohta range from

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deficient lighting to low memory capacity and are all obtained before the taking of the image (Paragraph 0136).

Therefore it would have been obvious to use the warning system of Ohta with the image capture system of Anderson '958 so as to ensure there is enough memory to capture the plurality of Salient images and that the photography conditions are setup correctly so that the image is captured with proper lighting.

7. Referring to claim 4, the display means of Ohta displays the warning indicators as a type of "Not Good" information indicating that the current photography conditions are poor or there is a lack of memory space for recording captured image data (Paragraph 0136).

8. Referring to claim 5, Ohta discloses that when the memory indicator determines that there is not enough room in the remaining memory for image capture, a number "0" is displayed on a 7 segment display 32 shown in figure 7 indicating the number of images that can be stored in the current free memory.

9. Referring to claim 6, Ohta discloses that when the memory indicator determines that there is not enough room in the remaining memory for image capture, a number "0" is displayed on a 7 segment display 32 shown in figure 7 indicating the number of images that can be stored in the current free memory.

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10. Referring to claim 7, Anderson '958 discloses an image pickup apparatus in figure 3 capable of taking images of the same object at a plurality of different exposure amounts defined by Anderson '958 as Salient images. The Salient images are combined to generate a single image having a wide dynamic range.

Anderson '958 also discloses an image capture method shown in figures 11A and 11B comprising a mode control means 1402 and 1406 for selecting between a normal image taking mode of generating image data from one frame, and a means of producing a wide dynamic image having proper exposure 1407 by automatically detecting the need for capturing Salient images when the control means 1404 detects a high contrast scene (Col. 9, Line 66 – Col. 11, Line 32).

Anderson '958 discloses a means of capturing a plurality of images having different exposure values to produce a synthesized wide dynamic image, but there is no means disclosed by Anderson for determining whether or not the Salient images can be captured or that the synthesized image can be produced.

Ohta discloses a camera having a pre-photography warning system that displays indicators to the user or used audio warnings denoting that the current photography or camera conditions are not suitable for image capture. The warnings disclosed by Ohta range from deficient lighting to low memory capacity and are all obtained before the taking of the image (Paragraph 0136).

Therefore it would have been obvious to provide the pre-photography warning system with the image capture system of Anderson '958 so as to alert the user that the photography conditions are poor so the user may make the necessary changes to the object scene to ensure a proper image capture.

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Ohta discloses various warnings displayed to the user concerning photographic operation of the camera. Ohta does not display the exact word “inconsistency” when the warning system determines that the photographic or camera conditions are not suitable for photography. One of ordinary skill in the art would recognize that any type of warning could be used to notify the user that conditions to photographing a scene are not good.

Therefore it would have been obvious to use any type of warning including the word “inconsistency” to denote that photographic conditions are not suitable and the user must make necessary changes in the object scene or the camera to make them constant of a normal photography condition.

11. Referring to claim 13, Anderson '958 discloses a means of capturing a plurality of images having different exposure values to produce a synthesized wide dynamic image, but there is no means disclosed by Anderson for determining whether or not the Salient images can be captured or that the synthesized image can be produced.

Ohta discloses a camera having a pre-photography warning system that displays indicators to the user or used audio warnings denoting that the current photography or camera conditions are not suitable for image capture. The warnings disclosed by Ohta range from deficient lighting to low memory capacity and are all obtained before the taking of the image (Paragraph 0136).

The directing of a change in the setting parameter of the deficient lighting of Ohta is implied. If the camera of Ohta indicates that there is deficient lighting, the user would deploy

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the flash or provide more exterior object scene lighting to compensate. Therefore, directing a photographer that there is deficient lighting is directing a change in the parameter setting.

12. Claims 8 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsai in view of Anderson US Pat No 6,215,523.

Referring to claim 8, Tsai discloses storing a plurality of frames having different exposure values along with their exposure ratios to a normal exposure N shown in the Framestore 200 in figure 2. Tsai does not disclose a means of displaying the exposure ratios.

However, Anderson '530 discloses a review mode in figure 8 that allows the user to view thumbnails 700 of captured images in a frame memory. Each image when enlarged 704 is accompanied with identifier information 708 used to distinguish that particular image (Col. 10, Line 39 – Col. 11, Line 23).

Therefore it would have been obvious to one of ordinary skill in the art to use the review mode of Anderson '523 with the image capture method of Tsai so as to review the plurality of images having different exposure levels using the exposure ratio information as each image's identifier so that the user can determine whether or not the proper exposure range of an object scene has been captured to generate a composite image having a wide dynamic range and proper exposure.

13. Referring to claim 14, Referring to claim 8, Tsai discloses storing a plurality of frames having different exposure values along with their exposure ratios to a normal exposure N shown in the Framestore 200 in figure 2. Images denoted with N – a number are darker, underexposed

images. Images denoted with N + a number are overexposed bright images. Tsai does not disclose a means of displaying the image data along with the brightness information.

However, Anderson '530 discloses a review mode in figure 8 that allows the user to view thumbnails 700 of captured images in a frame memory. Each image when enlarged 704 is accompanied with identifier information 708 used to distinguish that particular image (Col. 10, Line 39 – Col. 11, Line 23).

Therefore it would have been obvious to one of ordinary skill in the art to use the review mode of Anderson '523 with the image capture method of Tsai so as to review the plurality of images having different exposure levels using the exposure ratio brightness information as each image's identifier so that the user can determine whether or not the proper exposure range of an object scene has been captured to generate a composite image having a wide dynamic range and proper exposure.

14. Claims 10, 23, 24, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsai in view of Anderson US Pat No 6,177,958.

Referring to claim 10, Tsai discloses an image pickup apparatus capable of taking images of the same object at a plurality of different exposure amounts to generate image signals corresponding to a plurality of frames of different exposure amounts to generate a composite image having a wide dynamic range by synthesizing images signals of the plurality of frames having different exposure amounts.

Tsai also discloses a means of detecting motion in an image and correcting the motion if found to be in an allowable range for correction (Col. 2, Line 63 – Col. 4, Line 65).

Tsai does not disclose a means of displaying the operation status of the motion correction means. However Figure 6C of Anderson '958 shows an LCD viewing area 302 of the camera used to display the ON/OFF operation status of the Salient image capture mode. Anderson discloses that operation warning indicators can be in the form of text warnings in the text area 640, an indicator light 650, or an audio warning not shown on the display 302 (Col. 6, Line 51 – Col. 7, Line 4).

Since the motion correction means is an integral part of the wide dynamic range capture mode of Tsai it would have been obvious to provide an indicator as disclosed by Anderson '958 to alert the user that there is motion in the image so that photography direction can be administered to the object scene to produce as little motion as possible to ensure a high quality image capture.

15. Referring to claim 23, Tsai discloses an image pickup apparatus capable of taking images of the same object at a plurality of different exposure amounts to generate image signals corresponding to a plurality of frames of different exposure amounts to generate a composite image having a wide dynamic range by synthesizing images signals of the plurality of frames having different exposure amounts.

Tsai also discloses a means of detecting motion in an image and correcting the motion if found to be in an allowable range for correction (Col. 2, Line 63 – Col. 4, Line 65).

Tsai does not disclose a means of displaying the operation status of the motion correction means. However Figure 6C of Anderson '958 shows an LCD viewing area 302 of the camera used to automatically display the ON/OFF operation status of the Salient image capture mode.

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Anderson discloses that operation warning indicators can be in the form of text warnings in the text area 640, an indicator light 650, or an audio warning not shown on the display 302 (Col. 6, Line 51 – Col. 7, Line 4).

Since the motion correction means is an integral part of the automatic wide dynamic range capture mode of Tsai it would have been obvious to provide an indicator as disclosed by Anderson '958 to alert the user that there is motion in the image so that photography direction can be administered to the object scene to produce as little motion as possible to ensure a high quality image capture.

16. Referring to claim 24, the motion detection means of Tsai detects motion in short-time exposure image data and in the long-time exposure image data (Col. 2, Line 63 – Col. 4, Line 65).

17. Referring to claim 26, neither Anderson '958 nor Tsai disclose a camera shake circuit for controlling the ON/OFF of the generation processing of a wide dynamic range image. However, Official Notice is taken that camera shake detection circuits are well known in the art. Tsai discloses detecting valid images based on the lack of motion sensed in each pixel. Camera shake is a type of motion that causes blur in an image. Therefore it would have been obvious to include a camera shake detector circuit with the image capture means of Anderson '958 and Tsai so as to prevent camera shake motion in addition to object motion in an image so as to produce wide dynamic images free from blur.

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18. Claims 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson US Pat No 6,177,958 in view of Ikeda.

Referring to claim 12, Anderson '958 discloses an image pickup apparatus in figure 3 capable of taking images of the same object at a plurality of different exposure amounts defined by Anderson as Salient images. The Salient images are combined to generate a single image having a wide dynamic range and thus correcting the object image to have proper exposure (Col. 9, Line 66 – Col. 11, Line 32).

Figure 6C of Anderson '958 shows an LCD viewing area of the camera apparatus. A display means 660 is provided in the LCD viewer 302 for displaying captured image data but it is not specified that the synthesized images be displayed therein. However providing a means of displaying the synthesized data is well known as taught by Ikeda. Ikeda discloses a method of capturing images of the same object having different exposure amounts, then combining the bracketed images into a single synthesized image to be displayed on a monitor.

Therefore, it would have been obvious to display the synthesized image on the image display of Anderson '958 so that the user may preview the final product of the Salient image capture mode to ensure that the image has been captured with the proper exposure.

19. Claims 15 – 17, 19 – 21, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson US Pat No 6,177,958 in view of Anderson US Pat No 6,215,523.

Referring to claim 15, Anderson '958 discloses an image pickup apparatus in figure 3 capable of taking images of the same object at a plurality of different exposure amounts defined by Anderson as Salient images. The Salient images are combined to generate a single image

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having a wide dynamic range and thus correcting the object image to have proper exposure (Col. 9, Line 66 – Col. 11, Line 32).

Figure 8B of Anderson '958 shows the captured image data is divided into a plurality of desired regions. Luminance information is extracted from each of the plurality of areas to detect high contrast (Col. 7, Lines 49 – 67).

An exposure mechanism is employed as stated earlier to adjust the amounts of exposures of the plurality of images in a range of exposure values to achieve a range of luminance levels in the captured images suitable to combine the Salient images to form a composite image having wide dynamic range and proper exposure.

Anderson '958 discloses that the Salient images are grouped together and stored in memory in a file folder for further processing. Anderson '958 also discloses a display means but does not explicitly state that the Salient images are displayed to the user on the display means.

However, Anderson '523 discloses a means of displaying images stored in a file folder for user review. As shown in figure 8, a user enters a review mode and can view multiple images 700 on the LCD display area to determine if the captured images are acceptable (Col. 10, Line 39 – Col. 11, Line 23).

Therefore it would have been obvious to combine the image review mode of Anderson '523 with the Salient image capture of Anderson '958 to provide the user with a means of reviewing captured Salient images to ensure that the proper range of exposures were used in capturing the Salient images to create a composite image having a wide dynamic range.

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20. Referring to claim 16, Anderson '958 discloses that the user may define any zones necessary to properly partition a Salient image (Col. 7, Lines 49 – 57). One of ordinary skill in the art would recognize that in analyzing a plurality of images of the same object scene, it would be ideal to maintain the same image zones for each image so the exposures in each area can be directly correlated.

Therefore it would have been obvious to lock the plurality of exposure zones from a previous set so that the exposure correction may perform a uniform analysis on each Salient captured image to produce a proper exposure value for each region of the object scene.

21. Referring to claim 17, Anderson '958 discloses an image pickup apparatus in figure 3 capable of taking images of the same object at a plurality of different exposure amounts defined by Anderson '958 as Salient images. The Salient images are combined to generate a single image having a wide dynamic range and thus correcting the object image to have proper exposure. It is also disclosed by Anderson '958 that the user can set the exposure amounts of the plurality of images to be +X above and -X below the AE average value (Col. 9, Line 66 – Col. 11, Line 32).

Anderson '958 discloses that the Salient images are grouped together and stored in memory in a file folder for further processing. Anderson '958 also discloses a display means in figure 6C, but does not disclose that the Salient images are displayed in the display area of the LCD.

However, Anderson '523 discloses a means of displaying images stored in a file folder for user review. As shown in figure 8, a user enters a review mode and can view multiple

images 700 on the LCD display area to determine if the captured images are acceptable (Col. 10, Line 39 – Col. 11, Line 23).

Therefore it would have been obvious to combine the image review mode of Anderson '523 with the Salient image capture of Anderson '958 to provide the user with a means of reviewing captured Salient images to ensure that the proper range of exposures were used in capturing the Salient images to create a composite image having a wide dynamic range.

22. Referring to claim 19, Anderson '523 discloses a means of displaying images stored in a file folder for user review. As shown in figure 8, a user enters a review mode and can view multiple images 700 on the LCD display area to determine if the captured images are acceptable (Col. 10, Line 39 – Col. 11, Line 23).

It is also disclosed by Anderson '958 that the user can set the exposure amounts of the plurality of images to be +X above and -X below the AE average value so that the captured images are at suitable level in the wide dynamic range to produce a proper synthesized image on the basis of the exposure amounts of the plurality of images (Col. 9, Line 33 – Col. 11, Line 32).

23. Referring to claim 20, it is disclosed by Anderson '958 that the user can set the exposure amounts of the plurality of images to be +X above and -X below the AE average value captured so that the captured images range from a darkest portion luminance information of the darkest region and a brightest portion luminance information of the brightest region designated by the user within the object of a previously taken image (Col. 8, Line 28 – Col. 9, Line 65).

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24. Referring to claim 21, Anderson '523 discloses a means of displaying images stored in a file folder for user review. As shown in figure 8, a user enters a review mode and can view multiple images 700 on the LCD display area to determine if the captured images are acceptable (Col. 10, Line 39 – Col. 11, Line 23).

Anderson '958 discloses setting the range of exposure amount settings without detail of high and low level portions of images displayed on a display means (Col. 8, Line 28 – Col. 9, Line 65).

25. Referring to claim 28, Anderson '958 also discloses an image capture method shown in figures 11A and 11B comprising a mode control means 1402 and 1406 for selecting a means of producing a wide dynamic image having proper exposure 1407 by automatically detecting the need for capturing Salient images when the control means 1404 detects a high contrast scene (Col. 9, Line 66 – Col. 11, Line 32).

Allowable Subject Matter

Claims 9 and 18 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Referring to claim 9, the prior art of record fails to teach or suggest a means for correcting exposure amount of the image signals of the plurality of images having different exposure amounts and displaying the operation status of the means for correcting exposure amount of the plurality of images used to generate a wide dynamic range, synthesized image.

Referring to claim 18, the prior art of record fails to teach or suggest means for deciding exposure amounts for normal image taking from the synthesized output information where “normal image taking” is defined as a mode of capturing a image signal corresponding to one frame from the image pickup means as defined by the applicants specification on Page 4.

Claim 25 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Referring to claim 25, the prior art of record fails to teach or suggest detecting motion in the object based on an AF signal from an AF circuit.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Serizawa et al discloses another conventional method of wide dynamic image generation using a plurality of images having different exposure levels.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period


will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew L Rosendale whose telephone number is (703) 305-4909. The examiner can normally be reached on Monday - Friday 8: 00am-4: 00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on (703) 305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MLR


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